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Analysis of 40 cases of ectopic pregnancy to know the changing trends in the etiology and management.

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Abstract:
Aim*: Study of incidence of ectopic pregnancy in relation to ART usage and other etiological factors. Effect of advances in technology and management approach to ectopic pregnancy.*
Background*: Ectopic pregnancy is a complication of pregnancy in which the embryo attaches outside the uterus. With increase in the incidence of PID and use of ART for infertility, there is increase in the incidence of ectopic pregnancy in recent times. Fewer than 50 percent of affected women have symptoms. TVS is the best for early diagnosis. Medical management has a role in some cases.*
Material and methods: *Prospective study at GMH, Osmania medical college, Hyderabad from February– July 2013. 40 cases of ectopic pregnancy admitted during the period are analyzed as to etiology, clinical presentation, mode of diagnosis and management. There were 40 cases of ectopic pregnancy admitted to our institute during 6 month period from February– July 2013 as it is a tertiary care institute with referrals from public and private sector.*
Results: *ART for infertility, previous history of STD, MTP, and failed tubectomy are the common causes. Amenorrhea is the most common presenting symptom followed by pain abdomen. Urine pregnancy test, TVS and ß hcg measurement are main methods of diagnosis. 6 patients were in state of shock and were taken up for emergency laparotomy and salpingectomy; 12 had laparoscopic tubal resection and 10 received medical management.*
Conclusion: *Increased clinical suspicion, early diagnosis by TVS and effective medical management decreases the surgical morbidity and mortality.*
Keywords: *Unruptured ectopic pregnancy, Medical management, ART, Tubal surgery*

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I. Introduction:

An ectopic pregnancy occurs when a fertilized ovum implants outside the normal uterine cavity. [1] Ectopic pregnancy incidence in developed countries 2-4%. In developing countries ranging from 0.2-2.3% [2]. It is still the leading cause of first trimester mortality [3]. Amenorrhea and abdominal pain (95% women) are the main symptoms. Recent studies have shown that the incidence is on a rising trend as a result of assisted reproductive techniques [4].Also due to pelvic infections. Other risk factor is previous ectopic pregnancy. Overall recurrence in one previous ectopic is 10% and it increases to 25% if two or more [5, 2]. Previous tubal surgery is another cause.30% of tubectomy failures are ectopic implantations. Early diagnosis reduces the risk of tubal rupture and allows more conservative medical treatments to be employed. [6] Early diagnosis before rupture requires a high index of suspicion. A combination of serum ß hcg and transvaginal ultrasonography is the best method of diagnosis.Methotrexate is proved to be safe and effective alternative to surgery in properly selected cases, with a similar outcome. [7].This analysis is done to know the incidence, etiology, if any relation to ART for infertility, common clinical presentation and treatment received.

II. Material and Methods:

Prospective study at GMH Osmania medical college from February– July 2013: 6 month period.40 cases of ectopic pregnancy have been followed up. Clients were interviewed in order to find out etiology retrospectively. Detailed history is taken and through clinical examination done to assess the general condition of the woman. UPT, TVS, ß hcg measurement are done for confirmation of diagnosis and to decide for the mode of management. Emergency laparotomy and salpingectomy was performed in those with severe blood loss and in shock. Those who met with the criteria for medical management received methotrexate.

TABLE 1 - INCIDENCE

Symptom	Number of cases	percentage
Amenorrhea	35	87.5%
Pain abdomen	30	75%
Spotting	20	50%
Nausea & vomiting	5	12.5%
asymptomatic	2	5%

Incidence of ectopic pregnancy is 40 out of 10,000 pregnant women accounting to 0.4%
62.5% were unruptured.

TABLE 2-SYMPTOMATOLOGY

No of ruptured ectopic pregnancy	15	37.5%
No of unruptured ectopic pregnancy	25	62.5%
Total	40	

Amenorrhea in 87.5% is most common presenting symptom followed by pain abdomen in 75% women. Most of them presented with both the symptoms.

TABLE 3 - AETIOLOGY

Aetiology	Number of cases	percentage
ART	5	12.5%
STD	6	15%
MTP	5	12.5%
Failed tubectomy	7	17.5%
Prior tubal surgery	2	5%
Recurrent ectopic	2	5%
Cu T	2	5%
Not Known	11	27.5%

Failed tubectomy and prior tubal surgery account for 22.5% cases. ART for 12.5% cases and pelvic infections for 15%.

DIAGNOSIS-- UPT, TVS and serum ß hcg measurement are done for confirmation of diagnosis and to plan the mode of management. Early diagnosis by ultrasonography helped plan the mode of management as to medical or surgical.
34 (85%) cases were diagnosed before 6 weeks of gestation. 62.5% of the cases were diagnosed early before rupture with transvaginal USG.

TABLE 4 - SITE

Site of ectopic	Number of cases	percentage
Tubal ectopic	34	82.5%
ovarian	2	5%
Rudimentary horn	2	5
Heterotopic	1	2.5%
Secondary abdominal	1	2.5%

Implantation in fallopian tube is the commonest location seen in 82.5% cases. Ampulla is the most frequent site followed by isthmic portion.

Management:
Ruptured ectopic pregnancy

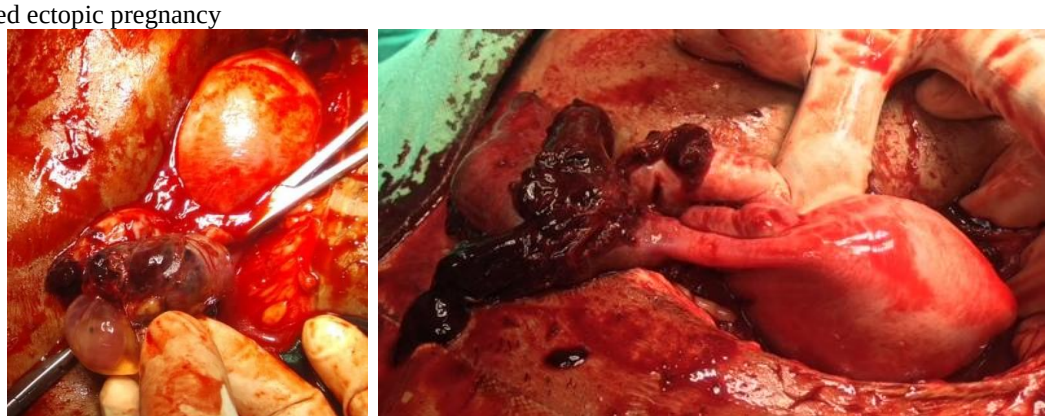

TABLE 5 – MANAGEMENT

Condtion of patient	Number of cases	Mode of management	percentage
In shock	6	Emergency laparotomy	15%
Stable	34		
Medical management	10	Multi dose 7 Success in 4	10%
		Single dose 3 Success in 2	5%
Expectant management	1		2.5%
Failed medical management	4	Laparoscopic salpingectomy	10%
Elective laparoscopy	8	Laparoscopic salpingectomy	20%
Laparotomy	15		37.5%

Six out of 40 patients (15%) were in a state of shock and were taken up for emergency laparotomy and salpingectomy.
34 out of 40 patients were stable. Of these 10 patients met with criteria for medical management. 11 out of remaining 24 patients were taken up for laparotomy due to persistent abdominal pain, a deteriorating general condition or refusal of medical management by the patient. 12 women (30%) underwent laparoscopic tubal resection. Total 21 women (52.5%) had laporotomy.
Medical management -10 patients met with criteria for medical management.7 were treated with 3 doses of methotrexate .4 of them responded well and 3 were taken for laparoscopic salpingectomy as there was increase

in the sac size and serum B hCG on followup. 3 received single dose regimen and 2 responded to it. One of them had laparoscopic salpingectomy as the woman had severe pain and refused medical management.
One patient had ß hcg of 350m iu/ml and gestational sac size of 2x1.5 cm treated with expectant management with complete regression on follow-up.
Due to lack of facility for emergency laparoscopic surgery, some patients who were stable underwent laparotomy in emergency as their condition deteriorated.

III. Discussion

The incidence of ectopic pregnancy has increased since the last 20 years. Incidence of ectopic pregnancy is 40 out of 10,000 pregnant women accounting to 0.4% in the present study.

62.5% were diagnosed before rupture and 37.5% presented after rupture. Ruptured ectopic pregnancy was present in 66.66%, 14.03% had unruptured ectopic in a study by V. S. Sudha, Delphine Rose Thangaraj [8]. Early diagnosis before rupture in majority of cases was possible in our study with high clinical suspicion, serum B hCG and transvaginal sonography.

In the present study amenorrhea is seen in 87.5% and is most common presenting symptom followed by pain abdomen in 75% women. Most of them presented with both the symptoms.

In Porwal Sanjay et al study, 87.5% reported with pain abdomen, bleeding per vagina encountered in 67.5% and 90% of cases had history of amenorrhea [8].These features help in early diagnosis of ectopic pregnancies.

Commonest site of ectopic was fallopian tube in our study (82.5%).The commonest site of location of the ectopic pregnancy was in the ampulla of the fallopian tube. Ampullary part of the tube was commonly involved in most of the ectopic pregnancies in other studies [9]

Pelvic infections accounted for 15%. This is correlating with the study done by V. S. Sudha, Delphine Rose Thangaraj with 15.78% of the cases with ectopic pregnancy [8] Endosalpingitis damages the mucosa and may entrap the migrating embryo, leading to ectopic implantation; Exosalpingitis results in peritubal adhesions, impairing peristaltic movements giving rise to inadequate transportation.

Failed tubectomy and prior tubal surgery accounted for 22.5% cases in our study .17.5% of them had previous sterilization. 6.57% of the women with ectopic pregnancy had tubal sterilization in study done by V. S. Sudha, Delphine Rose,[8]. Incidence is high may be because concomitant sterilization with LSCS and postnatal sterilization are the common procedures. In postpartum period, edematous, congested and friable tube increases the chance of incomplete tubal occlusion resulting in ectopic implantation. There is increased incidence of clinical or subclinical infection leading to endo and exosalpingitis especially in women with emergency caesarian section and with prolonged PROM.

5% women in our study had prior history of ectopic pregnancy. This is correlating with the studies done by Dr. Samiya Mulfti, et al (5.26%); Uzma Shabab, et al (5%) : V. S. Sudha, Delphine Rose Thangaraj 8.33% [10,11,8].There is increased risk of ectopic with previous ectopic pregnancy because it reflects the underlying tubal pathology which is almost always bilateral. Also there is further tubal damage following tubal surgery.

Ectopic pregnancy was seen in 5% women with IUCD use which correlates with the studies by V. S. Sudha, Delphine Rose Thangaraj 6.14% of the women with IUCD had ectopic pregnancy; Shraddha Shetty K, et al (6.4%); Shrestha et al (5%) and WM Fageeh (5.8%) [8, 12, 13, 14].IUCD has no effect on ovulation; it prevents intrauterine pregnancy but not tubal and ovarian pregnancy [12, 13, 14] .The risk of tubal pregnancy is more if a woman conceives with IUCD in situ.

ART is the cause in 12.5% cases. Ectopic pregnancy incidence after assisted reproductive technology has decreased over time, but factors such as multiple embryo transfer increase the risk of ectopic pregnancy. Although characteristics such as maternal age and tubal factor infertility are unmodifiable risk factors for ectopic pregnancy, efforts to decrease the number of embryos transferred may further reduce ectopic pregnancy risk after ART. [15]

The urinary pregnancy test, serum ß hcg and transvaginal ultrasound were used for diagnosis of ectopic pregnancy. Studies have shown that ultrasonography should be the initial investigation for symptomatic women in their first trimester; when the results are indeterminate, the serum humanchorionic gonadotropin concentration should be measured [16]

It is recommended not to treat unproven ectopic pregnancies in asymptomatic patients due to increased cost & psychological burden [17]

As medical management needs extremely close follow up, surgical management is still the method of choice in our country.[18] Laparaoscopy and medical management have now emerged as the widely used therapeutic modalities with great succession in terms of reduced morbidity, shorter hospital stay and conservation of fertility[19].However choice depends upon early identification of ectopic

pregnancy and stable condition of patients.[20]An initial ß hcg concentration and EP diameter were the only predictors of successful management with MTX[21]

With early diagnosis it is possible to improve the prognosis so far as morbidity, mortality, and fertility are concerned[22] No maternal mortality found in our study, consistent with V. S. Sudha, Delphine Rose Thangaraj; A,Abbas and H. Akram study [8,23]

Though incidence of ectopic pregnancy is rising 1/200 pregnancies, mortality (0-0.5%) has drastically decreased due to early diagnosis[24]. 60% of women with history of ectopic will have successful intra uterine pregnancy [3] In optimally selected candidate MTX has an overall success rate of nearly 90% [25]

IV. Conclusion:

With high clinical suspicion serum ß hcg and TVS early diagnosis is possible. (62.5%) were detected in unruptured state. Early diagnosis and effective medical management decreases surgical burden. Recent conservative management options of ectopic pregnancy are the use of medical management and laparoscopy. Availability of facilities for laporoscopic surgery in emergency helps reduce laporotomy and associated morbidity. Increased clinical suspicion, early diagnosis and timely management have resulted in zero mortality rates.

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